Appendix 2
Global Commodity Price Prospects

Commodity prices increased significantly from the lows reached shortly after the terrorist attacks on September 11, 2001 (figure A2.1). Crude oil prices rose 78 percent from the December 2001 lows to the highs in February 2003, just prior to the start of the war in Iraq, but have since declined. Agricultural prices were up 29 percent from the lows to recent monthly highs, while metals and minerals prices rose 15 percent. The decline of the dollar since early 2002 (10 percent on a real-trade weighted basis) contributed to the rise in commodity prices. Petroleum and most agricultural prices are now expected to decline on rising supplies, while metals and minerals prices are expected to continue their recovery because of higher demand in the foreseen economic recovery.

The increase in crude oil prices resulted from strong OPEC production discipline, extremely low inventories, cold winter weather, and supply disruptions in Venezuela, Iraq, and Nigeria. Higher output from other OPEC members leading up to the war in Iraq prevented prices from spiking sharply higher, and use of strategic stocks was not required. Crude oil stocks remain low and the return of Iraqi exports has been delayed, thus prices are likely to remain relatively firm for the balance of 2003. The return of Iraqi exports and rising capacity in both OPEC and non-OPEC countries is expected to lead to lower prices in 2004 and beyond. Large increases in production are expected in a number of regions in the coming years, in particular the Caspian, Russia, West Africa, and several deepwater locations. Much of the moderate growth in world oil demand is expected to be captured by non-OPEC producers, thus rising supply competition, both inside and outside OPEC, is expected to lead to lower prices.

The rise in agricultural prices since October 2001 was caused mostly by reduced supplies from earlier low prices and severe El Niño-related droughts in 2002 (in Australia, Canada, the Middle East, and the U.S.), which reduced grain and oilseed production. Cocoa supplies were disrupted by conflict in Côte d'Ivoire, while production was reduced for natural rubber, robusta coffee, cotton, and vegetable oils because of earlier low prices.

Most of the sharp agricultural price increases in 2002 and 2003 are expected to be reversed as surplus production capacity once again results from higher prices. More rapid economic growth would strengthen demand somewhat and moderate the price declines. However, income elasticities for most agricultural commodities are low, and with weak demand growth agricultural prices are expected to decrease.

Fertilizer prices generally increased in 2003 along with the recovery in agricultural commodity prices. Higher prices for natural gas—a key input in nitrogen fertilizer production—caused nitrogen fertilizer prices to rise sharply. In addition, production capacity utilization in the fertilizer industry increased to five-year highs and further contributed to the price in-

Figure A2.1 Commodity price trends

Index, January 2000 = 100

Source: World Bank.
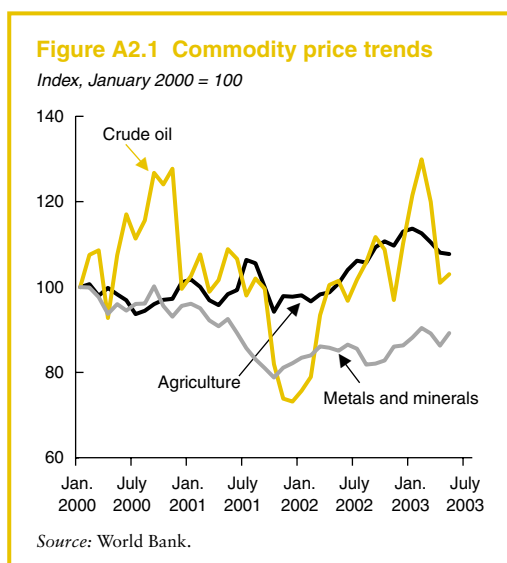
creases. The recent downturn in agricultural commodity prices is expected to be reflected in lower fertilizer prices in 2004 and 2005.

The modest recovery in metals and minerals prices resulted from production cuts beginning in 2001, and weakening of the U.S. dollar. Demand growth has been weak, and stocks of most metals remain high. The one exception is nickel, where strong demand for stainless steel, low inventories, and tight supplies, caused prices to almost double since the lows in 2001. A recovery in metals demand is expected to send most metals markets into deficit and allow prices to increase over the next several years. If global economic growth accelerates more quickly than projected, metals and minerals prices would increase more rapidly in the near term. Over the longer term, real prices are expected to decline as production costs continue to fall because of new technologies and improved managerial practices. There is also little constraint on primary resource availability.

Real commodity prices declined significantly from 1980 to 2002, with the World Bank's index of agricultural prices down 47 percent, crude oil prices down 43 percent, and metals and minerals prices down 35 percent (figure

A2.2). Such declines in commodity prices relative to manufactures prices pose real challenges for developing countries that depend on primary commodities for a substantial share of their export revenues. For example, 57 percent of merchandise exports from Sub-Saharan Africa in 2000 came from primary commodities and fuels. The situation is not expected to improve, with real non-oil commodity prices expected to increase only modestly through 2015 and crude oil prices expected to decline by 23 percent from 2002 levels. Multilateral trade negotiations could lead to higher agricultural prices if reforms reduce production subsidies and tariffs in major consuming and producing countries; however, little progress on reforms has thus far been achieved. (Specific commodity prices and price indices forecasts for 2003, 2004, 2005, 2010, and 2015 in current and constant dollars are given in appendix tables A2.14–16. The forecasts do not reflect the effects of a multilateral trade agreement because of the uncertainty of such an agreement.)
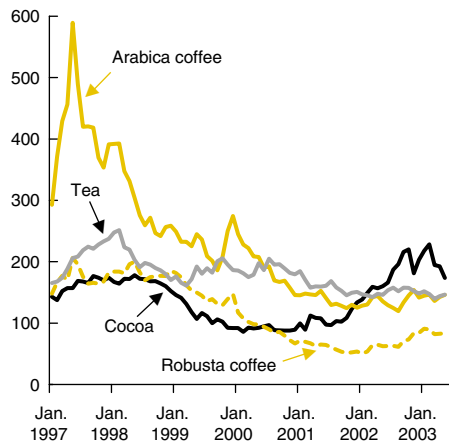
Beverages

The World Bank's index of beverage prices (composed of coffee, cocoa, and tea prices) is

Figure A2.2 Real commodity prices

Index, 1990 = 100

Source: World Bank.
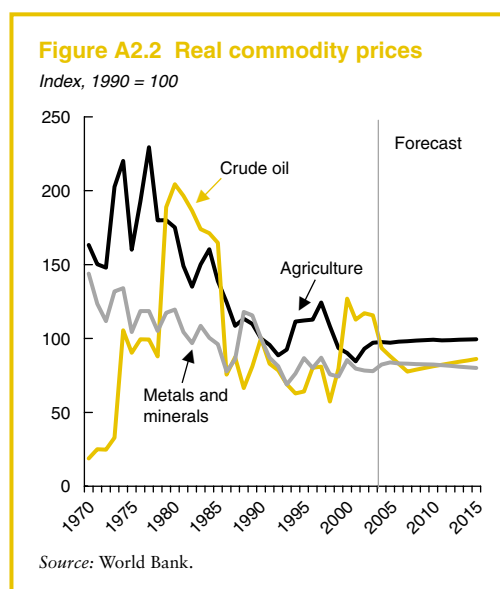
Figure A2.3 Beverage prices

US cents per kilogram

Sources: International Coffee Organization, International Cocoa Organization, International Tea Committee.

expected to increase by about 6 percent in 2003, largely reflecting coffee price increases (arabica up 7 percent and robusta up 33 percent) in response to reduced output from Brazil (figure A2.3). Cocoa prices, which have been (and are likely to be) extremely volatile because of the political unrest in Côte d'Ivoire, are expected to remain unchanged. Fears that tea prices might suffer a major setback resulting from the military conflict in Iraq did not materialize and the three-auction average for 2003 is expected to remain at its 2002 level.

Coffee.   Despite the increase in coffee prices expected in 2003, (robusta up US$0.22 to US$0.88/kg and arabica up US$0.10 to US$1.46/kg) prices will remain near historical lows—at about one-third of their 1960 real levels. Low coffee prices reflect both the surge in supplies and weak demand. During the past five seasons, global coffee production has averaged 114 million 60 kg bags, compared to 99 million bags during the five prior seasons when coffee prices peaked. Per capita consumption in the major importing countries has been stagnant at 4.6 kgs of green coffee equivalent during the past ten years.

Surpluses over the past four seasons have kept the coffee market depressed, and this situation has often been referred to as the "coffee crisis" by the popular press. Attempts to deal with the surpluses have either been largely unsuccessful or abandoned. The Association of Coffee Producing Countries (ACPC), which urged coffee-producing countries to join its export retention scheme, ceased operating last year. The International Coffee Organization (ICO), in an effort to reduce coffee availability and thus push prices higher, called for the removal of low-quality coffee beans. This plan too has met resistance because there is no well-defined compensation mechanism in place. In addition, improved roasting methods have made it easier to remove the harsh taste of natural arabicas and robustas, enabling roasters to produce the same coffee quality with lower-quality green beans, thus putting into question ICO's proposal.

Global coffee production during the 2003–04 season is expected to be about 107 million bags, down from last season's 123 million bags (table A2.1). Almost all of the reduction is because of reduced Brazilian output (from 52 million bags in 2002 to 34 million bags in 2003), which is partly because of less favorable weather conditions and partly because of the strength of the Brazilian currency. Still, Brazil will account for one-third of global coffee output while Colombia and Vietnam are expected to reach 12 and 11 million bags, respectively, and be the second and third largest coffee suppliers of arabica and robusta, respectively.

Coffee prices are projected to increase in 2004, with arabica up 9 percent and robusta up 5 percent. Over the longer term, real coffee prices are expected to increase relative to the 2002 depressed levels but remain well below the historical highs of the 1970s and more recent highs of the mid-1990s. By 2015, real arabica and robusta prices are projected to increase about 50 and 70 percent, respectively, over their 2002 levels. Prices would still be only about half of their 1990s peaks.

Table A2.1 Coffee production in selected countries
(million bags)

	1998	1999	2000	2001	2002	2003
Brazil	35.6	30.8	34.1	35.1	51.6	33.6
Colombia	10.9	9.5	10.5	12.0	10.9	11.8
Vietnam	7.5	11.0	15.3	12.3	10.3	10.8
Indonesia	7.0	6.7	6.5	6.2	6.0	6.1
México	5.0	6.2	4.8	4.2	4.4	4.7
Guatemala	4.3	4.4	4.6	3.5	3.8	3.8
Ethiopia	3.9	3.8	3.7	3.8	3.0	3.3
Uganda	3.6	3.1	3.2	3.5	3.1	3.2
World	108.4	113.4	116.6	110.1	122.8	107.1

Note: Years refer to crop years beginning in April.
Source: U.S. Department of Agriculture.

Cocoa. Cocoa prices have staged a remarkable recovery, going from a 30-year low of US$0.86/kg in February 2000 to a 16-year high of US$2.28/kg in February 2003. Prices have been extremely volatile, especially during the last two years, with month-to-month price changes often exceeding 10 percentage points. While the recovery in prices is a result of the return to normal supply levels, the volatility is a reflection of the political instability in Côte d'Ivoire, the world's dominant supplier.

Global cocoa production is expected to reach 3 million tons during the marketing season ending in September 2003, up from last season's 2.85 million tons (table A2.2). All of the increase is expected to come from Ghana, the world's second-largest cocoa supplier (from 341 to 450 thousand tons). Côte d'Ivoire's share is expected to remain largely unchanged at 1.26 million tons. Cocoa prices for 2003 are expected to remain at their 2002 levels, but a small decline is expected in 2004 as production continues to increase, an assessment which is based on the assumption that the strong prices enjoyed during the last two seasons will provide further incentives to cocoa growers to maintain their trees and increase production. The degree of volatility in cocoa prices is likely to remain high until the political unrest in Côte d'Ivoire is settled.

Table A2.2 Beverages global balances

	1970	1980	1990	1999	2000	2001	Annual growth rates (percent)		
							1970–80	1980–90	1990–00
Coffee *(Thousand bags)*									
Production	64,161	86,174	100,181	116,581	110,104	122,759	2.1	1.4	1.2
Consumption	71,536	79,100	96,300	106,343	108,186	110,750	1.0	2.0	0.2
Exports	54,186	60,996	76,163	90,394	86,823	88,974	0.8	2.4	1.7
Cocoa *(Thousand tons)*									
Production	1,554	1,695	2,506	2,812	2,850	2,996	0.5	4.6	1.2
Grindings	1,418	1,556	2,335	3,014	2,858	2,976	0.2	4.5	2.6
Stocks	497	675	1,791	1,111	1,137	1,127	2.4	13.9	–4.7
Tea *(Thousand tons)*									
Production	1,286	1,848	2,516	2,895	3,021	3,000	4.1	2.9	1.5
Exports	752	859	1,132	1,330	1,391	1,419	24	2.4	1.6

Notes: Time reference for coffee (production and exports) and cocoa are based on crop years (October to September for cocoa and April to March for coffee). For coffee consumption and tea time is calendar year.
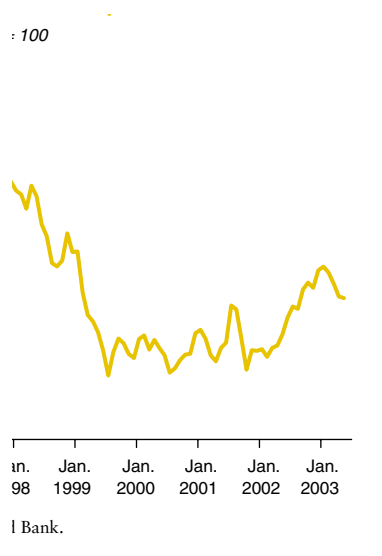*Sources:* US Department of Agriculture, International Coffee Organization, International Cocoa Organization, International Tea Committee, and World Bank.

Tea. The three-auction average tea price is expected to remain largely unchanged in 2003 vs. 2002 at about US$1.50/kg and therefore not to recover from the 20 percent decline between 2000 and 2002. The weakness in tea prices is expected to persist because of oversupply and a trend of slow growth of consumption. Production in 2002 was about the same as in 2001, but production is expected to increase in 2003. The rapid increase in production in Vietnam has contributed to already ample supplies and threatens to depress prices. Vietnam has doubled production since 1990.

Tea prices have been volatile because of the uncertainties associated with the war in Iraq and concerns that imports would be disrupted. In addition, excessive rains in Sri Lanka, the largest exporter, disrupted supplies. By 2015 real tea prices are expected to be slightly lower than in 2002.

Food

The World Bank's food price index is expected to rise 4.3 percent in 2003 and be up 11.2 percent from the low in 2000. However, the index is still well below highs reached in 1997 (figure A2.4). Following recent increases, the index is expected to decline 2.4 percent in 2004 and an additional 2.1 percent in 2005 as grain and oilseed prices decline from recent highs. Grains prices have increased almost 15 percent from the lows in 2001 and fats and oils prices have increased 26 percent. Over the longer term, real food prices are projected to decline 2.7 percent from 2003 to 2015.

Fats and oils. Prices of fats and oils are expected to increase almost 7 percent in 2003, which gives a cumulative increase of 20 percent since 2001. However, prices have recovered less than half of the decline experienced from 1997 to 2001. The price increase is expected to be greatest in groundnut oil (up 60 percent). Price increases are expected to be less in the two major oilseed crops, soybean and palm, with soybean oil up 16 percent and palm oil up 9 percent.

Global production of the 17 major fats and oils is expected to increase by 1.4 percent in the season starting October 2003, following last season's increase of 2.5 percent. Demand in 2003–04, to be fueled by increased imports by China and India, is projected to outpace production by at least 1 percentage point.

Global soybean production has increased by more than 5 percent per year since 1990, with the most rapid increase in Brazil and Argentina (table A2.3). Argentina and Brazil have been increasing production at nearly 10 percent per year since 1990.

Global palm oil production has doubled every eight years during the past three decades with the largest increases coming from Indonesia and Malaysia (table A2.4).

Table A2.3 Soybean production
(millions of tons)

Year	Argentina	Brazil	United States	World
1990	11.5	15.8	52.4	104.1
1995	12.4	24.2	59.2	124.9
2000	27.8	39.0	75.1	175.1
2001	30.0	43.5	78.7	184.3
2002	35.0	51.0	74.3	194.0

Note: Argentina, Brazil, and the U.S. account for about 83 percent of global production.
Source: USDA.

: 100

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98 1999 2000 2001 2002 2003

l Bank.

Table A2.4 Palm oil production
(million tons)

Year	Indonesia	Malaysia	Nigeria	World
1980	0.69	2.58	0.43	4.59
1985	1.24	4.13	0.39	7.04
1990	2.41	6.10	0.58	11.03
1995	4.22	7.81	0.66	15.22
2000	7.05	10.8	0.74	21.87
2001	8.03	11.8	0.77	23.92
2002	9.02	11.9	0.78	25.03
2003	9.60	12.7	0.79	26.59

Source: Oil World.

Grains. Global grain stocks, relative to use, are expected to recover slightly from last year's lows (excluding China where data is very uncertain). However, stocks remain low and there is still a risk that prices could rise sharply if yields in the coming crop year are significantly below trends. If yields are near trend, then prices should decline and stocks should continue to rebuild.

Maize prices are projected to rise 6.7 percent in 2003 and then decline 5.7 percent in 2004 as production increases and stocks rebuild (table A2.5). Production in the U.S., the major producer with 40 percent of world production, is projected to increase 12 percent in 2003–04 compared to the previous year. Real prices are projected to decline about 4 percent from 2003 to 2015 as yields continue to grow faster than consumption, as was the case during the 1990s.

Table A2.5 Global grain stocks-to-use
percentages (excluding China)

|	Maize	Rice	Wheat	Total grains
1997–98	10.1	9.3	16.5	13.0
1998–99	11.5	10.2	18.0	14.0
1999–00	11.4	11.8	17.1	13.6
2000–01	11.6	13.6	18.6	14.4
2001–02	10.4	13.1	20.4	14.9
2002–03	6.3	10.0	15.8	12.0
2003–04	8.9	10.2	16.9	12.5
90s Low	6.1	8.6	13.9	9.8

Note: Data for 2003–04 is the USDA's May 2003 estimate for wheat and maize and World Bank estimate for rice.
Source: USDA.

Rice prices are projected to rise about 4 percent in 2003 and an additional 3.0 percent by 2005. Rice prices are well below historical norms relative to other food grains, and this should increase import demand for rice relative to wheat. Lower Indian exports this year because of drought will also contribute to the price increases. Global rice stocks are low and prices could increase significantly if a poor crop reduces stocks further. Over the longer term, real rice prices are projected to rise 4.6 percent by 2015 vs. 2003, while most other grains prices are projected to decline.

Wheat prices are expected to decline in 2003–05 as production recovers from severe drought. Prices increased from US$112/ton in 1999 to US$148/ton in 2002, but are expected to decline to US$133/ton by 2005. Production in the major exporters (U.S., EU, Canada, Australia, and Argentina) is expected to increase 20 percent in the 2003–04 crop year and stocks are expected to increase 17 percent. However, global wheat stocks remain low (table A2.5) and there is a substantial risk that prices could rise if the drought persists.

Sugar. Sugar prices averaged 15.2 cents/kilogram in 2002 (figure A2.5). They are ex-

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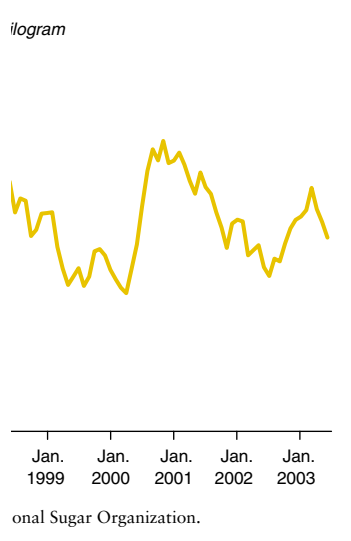
onal Sugar Organization.

Table A2.6 Foods global balances
(million tons)

	1970	1980	1990	2000	2001	2002	Annual growth rates (percent)		
							1970–80	1980–90	1990–00
Grains									
Production	1,079	1,430	1,769	1,839	1,872	1,807	2.88	1.55	1.04
Consumption	1,114	1,451	1,717	1,862	1,902	1,906	2.58	1.78	1.02
Exports	119	212	206	233	237	237	6.35	0.13	0.94
Stocks	193	309	490	536	506	407	7.24	3.83	−0.56
Soybeans									
Production	42.1	62.2	104.1	175.1	184.3	194.0	6.84	1.87	5.08
Consumption	46.0	68.1	104.3	172.2	182.3	194.2	6.53	2.04	4.99
Exports	12.3	20.8	25.4	55.5	55.1	63.2	5.24	0.80	2.88
Stocks	3.4	10.3	20.6	30.6	32.0	31.0	13.83	−0.66	0.20
Sugar *(raw equivalent)*									
Production	70.9	84.7	109.4	130.4	134.7	143.3	2.80	1.59	3.26
Consumption	65.4	91.1	106.8	130.3	134.9	136.6	3.30	1.40	3.00
Exports	21.9	27.6	34.1	37.7	40.7	46.6	3.26	0.83	3.12
Stocks	19.6	19.5	19.3	37.3	34.0	32.2	3.96	−0.77	4.52
Fats and oils									
Production	39.8	58.1	80.8	117.2	120.1	121.8	3.68	3.54	3.70
Consumption	39.8	56.8	80.9	116.8	120.9	123.8	3.55	3.69	3.64
Exports	8.8	17.8	26.9	38.3	41.0	42.2	7.05	4.19	3.39
Stocks	5.2	9.3	12.2	14.8	13.6	12.1	7.09	2.44	0.69

Notes: Time references for grains, soybeans and sugar are based on marketing years, shown under the year in which production began, and vary by country; for fats and oils, crop years begin in September. Fats and oils includes the 17 major fats and oils.
Sources: USDA and Oil World.

pected to increase slightly in 2003 and 2004 as supplies are curtailed and stocks reduced. High crude oil prices have contributed to the price increase by diverting sugar cane production to ethanol production in Brazil for use as vehicle fuel. Prices are projected to average about US$0.16/kg in 2003 and 2004, and rise slightly in 2005. The longer-term price prospects are not encouraging for producers unless global policy reforms are agreed in the current round of multilateral trade negotiations. Without reforms, nominal prices are expected to remain low except when supplies are reduced by drought in a major producing country.

Brazil, the world's lowest cost and largest sugar exporter, with about one-third of world sugar exports, has increased production and exports dramatically since 1990 and is expected to continue expanding. This has put downward pressure on prices, as Brazilian exports have increased from 1.3 million tons in 1990–91 to 14.2 million tons in 2002–03.

Global consumption grew by 3.0 percent per annum during the 1990s (table A2.6).

Raw Materials
The index of agricultural raw materials prices (composed of tropical hardwoods, cotton, and natural rubber) declined sharply during the Asia crisis and then stabilized before declining again as supplies of commodities continued to increase (figure A2.6). Prices reached a low in 2001 and have since recovered because of higher cotton and natural rubber prices. Nominal prices are projected to increase an additional 6 percent by 2005 from 2003 levels, while real prices are projected to rise 10 percent from 2003 to 2015.

Cotton.   Cotton prices are expected to increase 28 percent in 2003, following declines in the two previous years that took prices to 30-year lows. The price recovery is due mostly to an 11 percent reduction in supplies in the

Figure A2.6 Raw materials

Index, 1990 = 100

Source: World Bank.

The A Index cotton price is expected to average US$1.30/kg during 2003 and remain at approximately the same level during the next two seasons, as the market appears to have reached a balance. By 2015, real prices are projected to increase 30 percent relative to 2002 levels.

Natural Rubber.   Rubber prices are expected to increase 23 percent in 2003, after falling to historical lows in 2001 following the Asian financial crisis. The recent strength in rubber prices reflects increased demand as well as supply controls by Thailand and Indonesia, the dominant natural rubber suppliers with a combined 60 percent of global output. Consumption in 2002 increased 3.6 percent over 2001 and preliminary figures for 2003 indicate that it will stay strong. China, the world's dominant natural rubber consumer, has been the major source of increased demand (table A2.8). In the 12-month period ending May 2003, Chinese rubber demand increased 7 percent. Strong demand was also present by other main buyers, notably the U.S., Japan, and Germany. The demand for natural rubber has also been aided by lower demand for synthetic rubber, whose prices increased considerably because of high crude oil prices (crude oil is a major cost component of synthetic rubber).

Natural rubber prices are expected to remain above US$0.90/kg for the next two to three years. Over the longer term, real prices are projected to increase slightly over the 2002 levels.

2002–03 marketing season (table A2.7). Most of the reduction came from China and the U.S., the world's two dominant cotton suppliers, which account for over 40 percent of global output.

The 2003 increase in cotton prices is expected to lead to a strong supply response, according to the International Cotton Advisory Committee. They estimate the 2003–04 global cotton production will be 9 percent higher than this season's crop. Most of the increase is expected to come from China (almost 1 million tons). Global consumption is expected to stay slightly higher than production, causing stocks to fall for a second consecutive season.

Table A2.7 Cotton production in selected countries

(million tons)

	1998	1999	2000	2001	2002	2003
China	4.50	3.83	4.42	5.32	4.92	5.80
United States	3.03	3.69	3.74	4.42	3.75	3.71
India	2.71	2.65	2.38	2.69	2.35	2.68
Pakistan	1.48	1.91	1.82	1.80	1.70	1.80
Uzbekistan	1.00	1.13	0.98	1.06	1.03	0.99
Franc Zone	0.90	0.93	0.70	1.03	0.93	0.95
World	18.55	19.09	19.46	21.51	19.20	20.96

Notes: Years refer to crop years that begin in August.
Source: International Cotton Advisory Committee.

Table A2.8 Natural rubber consumption
(thousand tons)

	1999	2000	2001	2002
China	997	1,123	1,224	1,332
United States	1,116	1,142	1,010	1,046
Japan	733	753	729	774
India	617	638	631	675
Korea, Rep. of	325	331	327	321
Germany	226	250	245	254
France	253	262	262	241
World	6,771	7,129	6,973	7,223

Sources: LMC International, International Rubber Study Group.

Tropical Timber.   Tropical timber prices recovered in 2002 and 2003 from sharp declines in 2001, with nominal prices up 9 percent in 2002 and expected to be up an additional 5 percent in 2003. The initial price increases were supported by the decline of the dollar vs. the Yen and Euro, but the price recovery appears to have stalled in 2003 as demand has weakened in Asia and Europe. China has become the largest tropical log importer, displac-

ing Japan, and has become a significant plywood producer and exporter. The partial ban on log exports from Asian and African exporters, intended to increase domestic processing, has raised the prices of logs, and somewhat restricted supplies, while depressing prices of sawnwood and plywood relative to logs. However, the bans have not been totally effective and illegal exports continue. Tropical timber prices are expected to continue to recover, up 3 percent in 2004 and up 7 percent in 2005, with demand in China, Japan, and Europe important factors determining the rate of price increase. Real tropical timber prices are projected to increase 28 percent from 2003 to 2015, but stay below the highs of the 1990s as new technology allows better utilization of timber.

Fertilizers

Fertilizer prices generally increased in 2003 as demand increased because of the rise in agricultural commodity prices. Among the
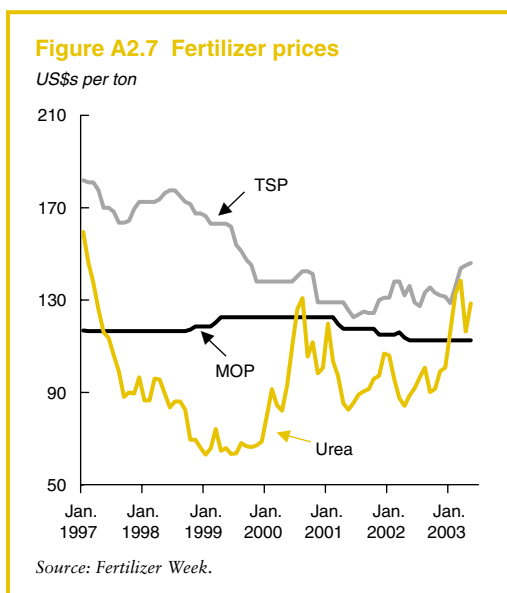
Table A2.9 Raw materials global balances

	1970	1980	1990	2000	2001	2002	Annual growth rates (percent)		
							1970–80	1980–90	1990–00
Cotton *(thousand tons)*									
Production	11,740	13,832	18,970	19,461	21,510	19,200	1.2	3.1	0.8
Consumption	12,173	14,215	18,576	19,886	20,194	21,000	1.1	3.1	0.2
Exports	3,875	4,414	5,081	5,857	6,496	6,500	0.9	2.8	0.5
Stocks	4,605	4,895	6,645	9,637	10,585	8,780	1.7	2.8	1.4
Natural rubber *(thousand tons)*									
Production	3,140	3,820	5,080	6,730	7,190	7,110	1.8	3.2	3.1
Consumption	3,090	3,770	5,190	7,340	7,080	7,390	1.6	3.2	3.3
Net Exports	2,820	3,280	3,950	4,930	5,140	5,040	1.3	2.1	1.8
Stocks	1,440	1,1480	1,500	1,930	2,040	1,760	0.6	0.2	3.7
Tropical timber *(thousand cubic meters)*									
Logs, production	210	262	300	279.5	283.3	n.a.	1.5	1.7	0.5
Logs, imports	36.1	42.2	25.1	18.6	17.9	n.a.	0.2	5.1	5.4
Sawnwood, production	98.5	115.8	131.8	109.1	106.2	n.a.	1.2	1.7	2.0
Sawnwood, imports	7.1	13.2	16.1	23.1	22.5	n.a.	5.0	2.6	3.3
Plywood, production	33.4	39.4	48.2	58.1	55.5	n.a.	1.2	2.0	0.5
Plywood, imports	4.9	6.0	14.9	19.0	19.2	n.a.	0.7	9.1	3.6

n.a. = Not available.
Notes: Time reference for cotton is based on crop year beginning in August; for natural rubber and tropical timber, time refers to calendar year.
Sources: International Cotton Advisory Committee, International Study Rubber Group, FAO, and World Bank.

Figure A2.7 Fertilizer prices

US$s per ton

Source: Fertilizer Week.

Potash prices, as represented by muriate of potash (MOP), remained constant because prices are set by annual contracts, and have not kept up with changed market fundamentals. Fertilizer demand is expected to fall in 2004 and 2005 in response to the recent downturn in agricultural prices and this should cause most fertilizer prices to weaken.

Urea prices rose about 38 percent in 2003 due partly to higher prices for natural gas. Demand increased by an estimated 4 percent resulting from higher planted crop area and higher application rates. Nitrogen production capacity utilization increased to about 85 percent in 2002 from about 81 percent in 2001, and is at the highest level in several years. In response to higher prices and demand, global production and exports both increased about 4 percent in 2002 after declining in the previous year. Prices are expected to decline about 4 percent per year in 2004 and 2005 as demand weakens and natural gas prices begin to decline resulting from lower crude oil prices. By 2015, real urea prices are expected to fall 9.5 percent from 2003 levels as the industry expands production capacity more rapidly than demand.

MOP prices remained unchanged in 2003, but new contract prices are likely to increase in

three major types of fertilizer, nitrogen prices (as represented by urea) increased most rapidly because of higher prices of natural gas used in production in addition to demand increases. Phosphate fertilizer prices, as represented by triple super phosphate (TSP), increased after falling for several years as demand increased and production capacity utilization increased.

Table A2.10 Fertilizers global balances

(million tons

	1970	1980	1990	1999	2000	Est. 2001	Annual growth rates (%)		
							1970–80	1980–90	1990–00
Nitrogen									
Production	33.30	62.78	82.28	87.75	84.62	82.3	6.53	3.12	0.28
Consumption	31.76	60.78	77.18	84.95	81.62	n.a.	6.86	2.60	0.56
Exports	6.77	13.15	19.59	23.94	24.70	24.6	7.23	5.10	2.34
Phosphate									
Production	22.04	34.51	39.18	32.51	31.70	30.7	3.72	1.70	–2.10
Consumption	21.12	31.70	35.90	33.46	32.65	n.a.	3.85	1.39	–0.90
Exports	2.92	7.51	10.50	12.70	12.11	n.a.	8.37	5.01	1.44
Potash									
Production	17.59	27.46	26.82	25.01	25.54	25.9	3.97	–0.03	–0.49
Consumption	16.43	24.24	24.68	22.12	22.16	n.a.	3.93	0.05	–1.07
Exports	9.45	16.72	19.82	22.65	23.41	23.2	4.89	0.73	1.68

n.a. = Not available.
Notes: All data are in marketing years.
Source: FAO. The data for 2001 are estimated by World Bank staff from industry sources.

2004 in response to improved demand and the highest capacity utilization rates in five years. Production rose about 3 percent in 2002, with most of the increase coming from Canada, which accounts for 40 percent of world exports and one-third of production. Prices are expected to increase by about 3 percent in 2004 and remain at the higher level in 2005. Increased domestic production in China, along with large surplus global production capacity, is expected to keep price increases small. By 2015, real prices are projected to fall 3.5 percent compared to 2003.

TSP prices increased 7 percent in 2003 after falling 23 percent from 1998 to 2001 and increasing 6 percent in 2002. Production increased by about 7 percent in 2002, with production in the U.S.—the world's largest producer with a 30 percent share—increasing by 13 percent, according to industry sources. Exports declined because of a sharp drop in Chinese imports, which were replaced by increased domestic production. TSP prices are expected to decrease marginally in 2004 and 2005 as demand weakens; however, surplus production capacity is smaller than for other major fertilizers and is expected to remain tight over the next several years. Thus real prices are projected to remain about constant between 2003 and 2015.

Metals and Minerals

Metals and minerals prices have rallied a number of times since the lows of October 2001, often on investor expectations that a global economic recovery would lead to higher demand for metals. However, prospects for a strong economic recovery have kept being pushed back and the price rallies have been short-lived. Yet the index for metals and minerals is up 13 percent since October 2001 on improving fundamentals—notably producer cutbacks, some modest reduction of inventories, and weakening of the U.S. dollar.

As major producers and consumers do not have their currencies linked to the dollar, the metal prices in dollars fluctuate with the value

Figure A2.8 Index: Metals prices and exchange rates

Index, January 1990 = 100
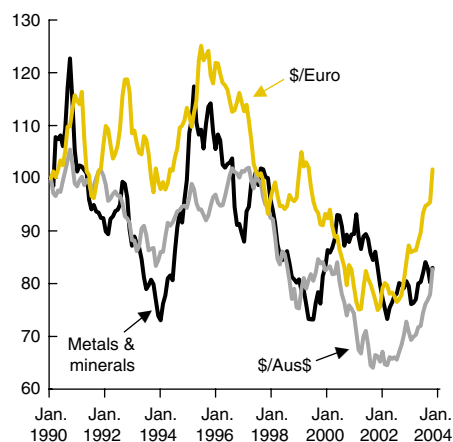
Source: World Bank, Datastream.

of the U.S. dollar, rising when the Euro or Australian dollar appreciate and falling in the opposite case (figure A2.8).

Most metals markets are expected to remain in surplus or a balanced position in 2003, and slip into deficit in 2004 as demand recovers. During the upturn of the next economic cycle metals prices could rise significantly, as is typical during a recovery. However, higher prices will induce development of new capacity and the restart of idle facilities, and prices will eventually recede. Real prices are expected to decline in the longer term (figure A2.9), as production costs continue to fall from new technologies and improved managerial practices, and there is little constraint on primary resource availability. The one exception is nickel, where new supply prospects over the next few years are quite limited, which could lead to much higher prices.

Aluminum

Aluminum prices have been relatively steady the past year (figure A2.10), despite extremely high inventories and a market in surplus. Three main factors have limited an expected widening surplus and supported prices. First,

Figure A2.9 Index: Metals and minerals

Index, 1990 = 100

Source: World Bank.
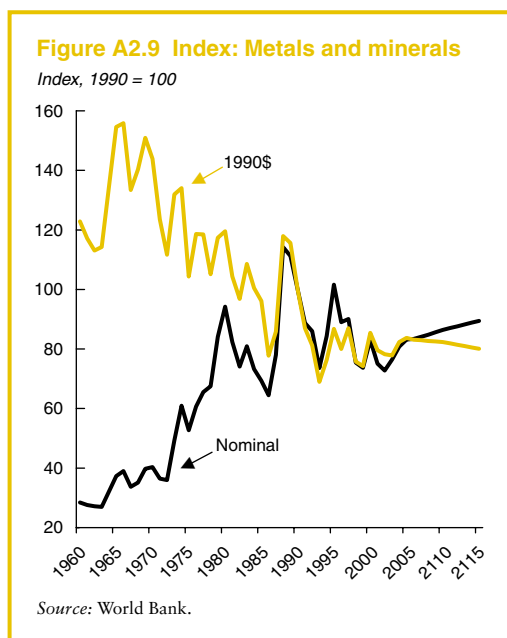
several production cuts have occurred in North America and elsewhere because of electric power-related difficulties. Second, tightness in alumina supplies has resulted in high alumina prices, which may slow Chinese alu-

Figure A2.10 Aluminum price and LME stocks

Sources: Platts Metals Week, London Metal Exchange.
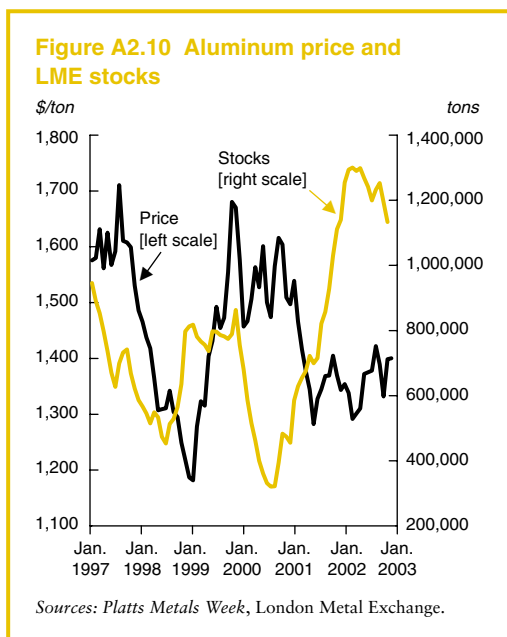
minum production growth—where much of the recent increase has occurred—as it is a large importer of alumina. Finally, tightness in scrap supplies has generated higher demand for primary aluminum.

If these conditions continue into 2004, the large surplus that had been forecast may not occur. This may limit the price declines that some had forecast. However, world aluminum production in May was the highest on record, with Chinese production up 29 percent for the first five months of this year. There is also the possibility that shut-in capacity could be restarted.

The aluminum market is expected to move into deficit in 2005, but there are a number of uncertainties in the near term, e.g., the extent of demand growth, reactivation of idle capacity, and the size of Chinese net exports. Real prices for primary aluminum are expected to slightly decline in the long term following a modest recovery during the next economic cycle. New low-cost capacity in a number of countries, e.g. Canada and the Middle East, is expected to meet the relatively strong growth in demand, although new investment will continue to require low-cost power supplies. There is not expected to be any constraint on *alumina* supply over the forecast period, and several new alumina capacity expansions are underway, e.g., Australia and Brazil.

Copper

Copper prices have risen more than 20 percent from the lows of October 2001, largely because of a number of production cutbacks and curtailments that began in 2001. This has helped reduce the large surplus that emerged in 2001, and LME copper stocks have fallen about 30 percent from the peak in 2001—yet they remain relatively high (figure A2.11). In the first quarter of 2003, the global copper market moved into deficit according to the *International Copper Study Group*, because of lower world production and relatively strong demand, particularly in China where consumption rose more than 20 percent from a year earlier.

Figure A2.11 Copper price and LME stocks

$/ton   *tons*

Stocks
[right scale]

Price
[left scale]
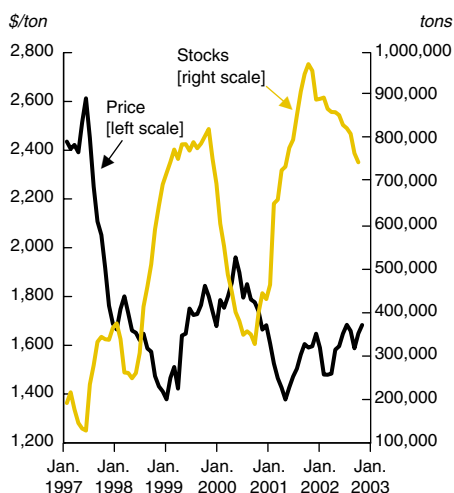
Sources: Platts Metals Week, London Metal Exchange.

Demand outside of China and neighboring Asian countries remains relatively weak, and the market could remain in surplus in 2003. Much will depend on the extent of the economic recovery and continuation of production cuts in Latin America and the U.S. The market is expected to move into deficit in 2004 as demand recovers, which will put upward pressure on prices. However, the restart of idled capacity in Chile and the U.S. could prevent prices from moving sharply higher.

In the medium term, the market is expected to return to balance as new capacity is expected to meet the projected growth in global consumption of around 3.5 percent per year, which will be mainly driven by strong growth in China and other Asian countries. Over the longer term, increases in new low-cost capacity are expected to result in a continued decline of real prices. A major uncertainty over the forecast period will be the volume of Chinese imports.

Nickel

Nickel prices have risen about 75 percent from October 2001 (figure A2.12), because of low stocks, strong demand for stainless steel, and tight supplies. A strike at Inco's operations in Sudbury, Canada, on June 1, 2003, briefly sent prices above US$9,500/ton, but prices receded after Russia's Norilsk agreed to release 24,000 tons from inventory. This followed an announcement by the company in April to release 16,000 tons.

Demand for nickel rose 6 percent in 2002 because of strong growth of stainless steel production, led by China, which increased stainless steel output by around 20 percent. Growth for both stainless steel and nickel is expected to weaken slightly this year, mainly because of the slowdown in Europe, before strengthening in 2004. The nickel market is expected to slip into deficit this year and remain so in 2004 and 2005, mainly because of a dearth of major new projects to come on stream over this period.

Nickel producers have had a number of setbacks with pressure acid leach (PAL) technology at new laterite deposits (a high proportion of potential new developments have this type of ore-body). Technical problems and substantial cost overruns have significantly

Figure A2.12 Nickel price and LME stocks

$/ton   *tons*

Stocks
[right scale]

Price
[left scale]
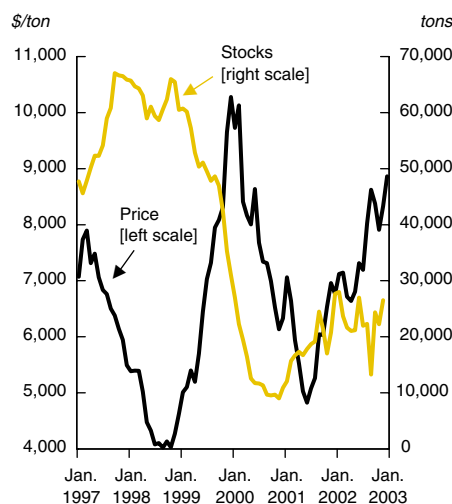
Sources: Platts Metals Week, London Metal Exchange.

Table A2.11 Metals and minerals global balances
(thousand tons)

	1970	1980	1990	2000	2001	2002	Annual growth rates (%)		
							1970–80	1980–90	1990–00
Aluminum									
Production	10,257	16,027	19,362	24,485	24,477	26,099	3.2	1.9	2.4
Consumption	9,996	14,771	19,244	24,903	23,561	24,944	3.2	1.8	2.6
LME Ending Stocks	n.a.	68	311	322	821	1241	n.a.	−0.3	0.3
Copper									
Production	7,583	9,242	10,809	14,820	15,889	15,336	1.9	1.1	3.2
Consumption	7,294	9,400	10,780	15,176	14,876	14,963	2.5	1	3.5
LME Ending Stocks	72	123	179	357	799	856	7.4	−5.6	7.1
Nickel									
Production	n.a.	717	842	1,107	1,145	1,177	n.a.	1.6	2.8
Consumption	n.a.	742	858	1,172	1,178	1,206	n.a.	1.5	3.2
LME Ending Stocks	2	5	4	10	19	22	n.a.	−0.5	9.6

n.a. = Not available.
Sources: World Bureau of Metal Statistics, London Metal Exchange, and World Bank.

limited the expected ramp-up of production at new projects in Australia. In addition, Inco has temporarily suspended some construction work at its US$1.4 billion Goro project in New Caledonia, after costs escalated by 30–45 percent. The company's current review of the project may delay start-up of production into 2006. These difficulties at laterite projects will likely impact development of forthcoming PAL operations. Cost estimates for future developments are being raised, which will likely result in higher long-term nickel prices.

With no new major greenfield projects on the immediate horizon, nickel prices could jump significantly over the next couple of years before new supplies bring the market back into balance. Over the longer term, large new projects are planned for development, and a new generation of technology and operational practices may help to reduce costs. In addition to the risks of higher costs, a major uncertainty for the nickel market is the pace of demand growth in China.

Gold

In 2002, gold prices climbed above their four-year trading range of roughly US$250–$300/toz, largely because of the buyback of hedged positions by gold producers (referred to as de-

hedging). In addition, increased investment demand resulting from declining equity markets and the U.S. dollar helped support prices. More recently, much of the movement in gold prices seems to have been largely currency related (figure A2.13).

Producer dehedging totaled about 4.5 million ounces in the first quarter of 2003 (6 per-

Figure A2.13 Gold price and $/euro
Index, January 1997 = 100
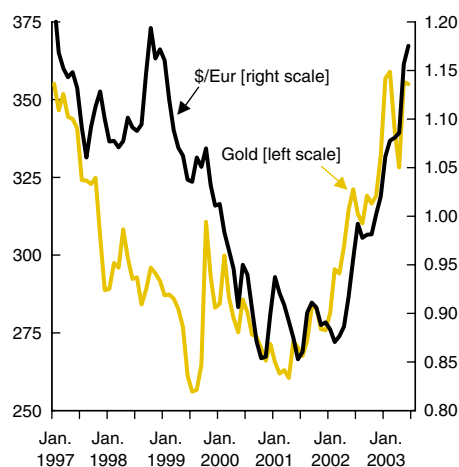
Sources: Platts Metals Week, Datastream.

Table A2.12 Gold global balance
(tons)

	2001	2002	2002 (% y/y.)	1Q02	2Q02	3Q03	4Q04	1Q03	1Q03 (% y/y.)
Jewelry	3,037	2,688	−11.5	655	638	657	738	586	−10.5
Other Fabrication	476	485	1.9	125	117	117	126	151	20.8
Bar Hoarding	248	252	1.6	80	53	61	58	35	−56.3
Net Producer Hedging	151	423	180.1	31	104	149	139	145	367.7
Implied Net Investment	–	130	n.a.	40	48	24	17	64	60.0
Total Demand	3,912	3,978	1.7	931	960	1,008	1,078	970	4.2
Mine Production	2,623	2,587	−1.4	570	637	727	653	572	0.4
Official Sector Sales	529	556	5.1	163	118	83	191	151	−7.4
Old Gold Scrap	708	835	17.9	198	205	198	234	248	25.3
Implied Net Disinvestment	52	–	n.a.	–	–	–	–	–	
Total Supply	3,912	3,978	1.7	931	960	1008	1078	970	4.2

n.a. = Not available.
Sources: Gold Field Minerals Service and World Bank.

cent of producer hedges), about the same level of reduction that occurred in each of the third and fourth quarters of 2002, according to *Gold Field Mineral Services*. Many companies have indicated a desire to further reduce their hedges, and shareholder sentiment generally appears to be against hedging. This was evidenced in the first quarter of 2003 when, despite high prices, little new hedging took place. However, hedging of gold is unattractive at current low interest rates.

It is expected that producer dehedging will slow in the second half of this year and in 2004, and remove much of the support under gold prices. And at some point, higher interest rates may trigger another bout of hedging.

Higher gold prices have had a negative impact on consumer demand. In the first quarter of 2003, jewelry demand fell by more than 10 percent (table A2.12), with declines in both developing and developed regions. In the largest consuming country, India, demand fell 13 percent, following a 20 percent drop in 2002. High prices will continue to weaken the price-sensitive jewelry demand market, and stimulate investment in new production, and from scrap. Over the medium term prices are expected to fall below US$300/toz as supplies from all sources exceed demand. Even below US$300/toz, mine production is expected to continue to increase moderately as new low-cost operations come on stream.

Finally, official central bank sales continue to take place. An important determinant of medium-term prices will be the decision by central banks whether to further stem official gold sales when the Washington Agreement expires in 2004 (the European Central Bank and 14 European central banks agreed in September 1999 to sell only 400 tons of gold per year, and not more than 2,000 tons in total, for the subsequent five years).

Petroleum

Since late 1999, the average oil price (for Brent, Dubai, and WTI) has generally been above US$25/bbl, with the exception of the slump following the September 11, 2001, attacks (figure A2.14). Excluding the slump, oil prices averaged about US$27.1/bbl, compared to US$17.6/bbl over the 1986–99 period. The higher prices are mainly because of strong production discipline by OPEC, but have also been supported by periods of low stocks, supply disruptions, and cold weather.

Following the collapse of prices in 1998, OPEC began adjusting production quotas as required to maintain prices within a band of US$22–$28/bbl for its basket of crudes. By and large the organization has been successful, though its market share has slowly eroded. For OPEC-10 (excluding Iraq), its *crude oil* production as a share of total world oil supply fell

Figure A2.14 Oil price and OECD stocks

$bbl   *mil bbl*

Sources: International Energy Agency, World Bank.
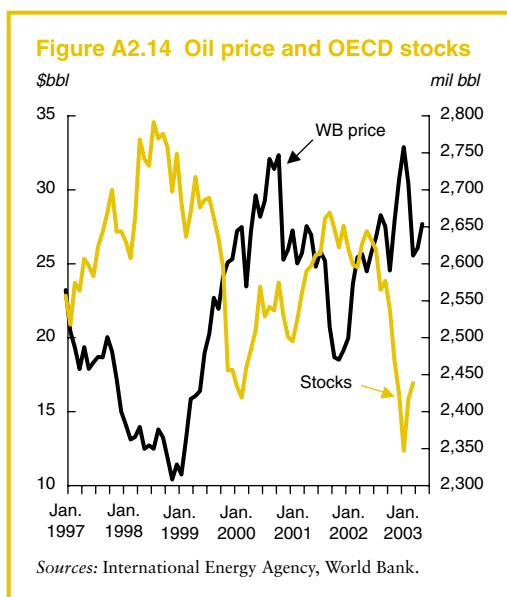
from 35 percent in 1996–97 to 30 percent in 2002.

The escalation of prices in 2002 resulted from large OPEC production cuts (figure A2.15), augmented by expectations of supply disruption as the U.S.-led coalition prepared for war in Iraq. The physical market tightened in the second half of 2002 from lower OPEC output, and then oil inventories fell precipitously after Venezuela's oil exports ceased in December because of strikes, and as cold weather raised peak-winter demand. At end-winter 2003, oil inventories were near historic lows.

With the loss of Venezuela's production and impending loss of Iraq's exports, other OPEC producers raised production significantly, particularly from the Gulf. Saudi Arabia's production rose from 7.7 mb/d in the fourth quarter of 2002 to more than 9.0 mb/d by March 2003, and the rest of OPEC (excluding Venezuela and Iraq) added more than 1 mb/d over this period, with the largest increases from Kuwait, UAE, and Algeria. At the same time, Venezuela's production began to recover, although it appears that some 0.4 mb/d of capacity was permanently lost as a result of the strikes.

The disruption to oil supplies from the war in Iraq was limited to Iraqi exports of about 2 mb/d. Higher output from other OPEC members was sufficient to prevent a sharp spike in prices, and emergency stocks in consuming countries were not withdrawn. Oil prices peaked in early March just before the conflict commenced at US$34.2/bbl.

Figure A2.15 OPEC-10 production and quotas

mb/d

Sources: International Energy Agency, OPECNA.
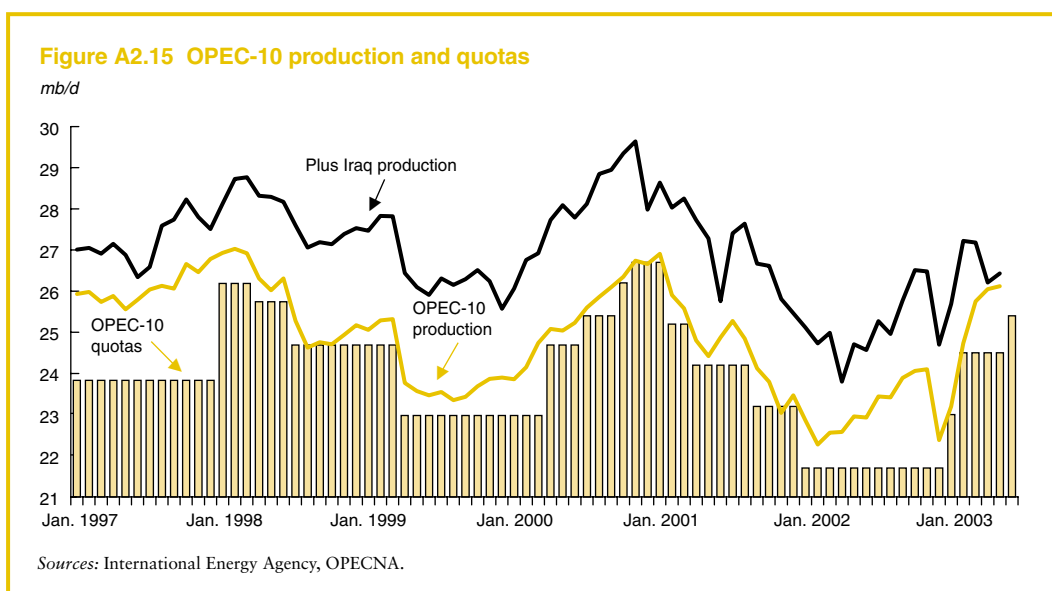
Iraq's exports did not restart soon after the war ended because of widespread looting and problems with pumping facilities and pipelines. Because of broader problems with electricity, water, and other facilities that service the oil sector, it is unlikely that Iraq's pre-war production of around 2.5 mb/d will be reached this year.

The delay in resumption of Iraqi exports and the low level of oil inventories eases the task for OPEC this year of maintaining prices within its band. However, the difficulty managing oil prices is expected to deepen in 2004, as Iraq oil exports exceed pre-war levels. OPEC will have to absorb Iraq back into its quota system at some point, and quotas for all members may need to be adjusted. A number of OPEC members are raising capacity and will likely request higher quotas, e.g., Algeria and Nigeria. The expansion of OPEC capacity will occur when non-OPEC producers are expected to capture virtually all of the growth in world oil demand. Consequently, oil prices are expected to fall to the lower end of OPEC's price band in 2004.

Downward pressures on oil prices are expected to continue in subsequent years, as much of the moderate growth in world oil demand, about 1.5 mb/d, will be captured by strong gains in non-OPEC supply of more than 1 mb/d per year. Large increases are expected from Russia, the Caspian Sea, West Africa, and the Western Hemisphere, including the U.S. because of significant developments in the deepwater Gulf of Mexico. BP reports that between 2002 and 2007, 5 mb/d of new supply are likely to come on stream from these regions alone.

This will leave little room for growth in OPEC production. With the build-up of new capacity in many OPEC countries, including Iraq, oil prices are expected to decline. By 2006–07, oil prices are expected to fall to US$18/bbl (figure A2.16) as significant volumes of new production begin from the Caspian, and as production and export capacity increase more broadly from the FSU, West Africa, and other regions.

A risk to the forecast is that OPEC will maintain strong production discipline over the next few years to keep prices at or above US$25/bbl. If successful, it would further impact oil demand growth and stimulate even greater supplies from competing sources. It is felt that OPEC would only prolong a decline in oil prices that is expected by mid-decade.

Figure A2.16 World Bank oil price
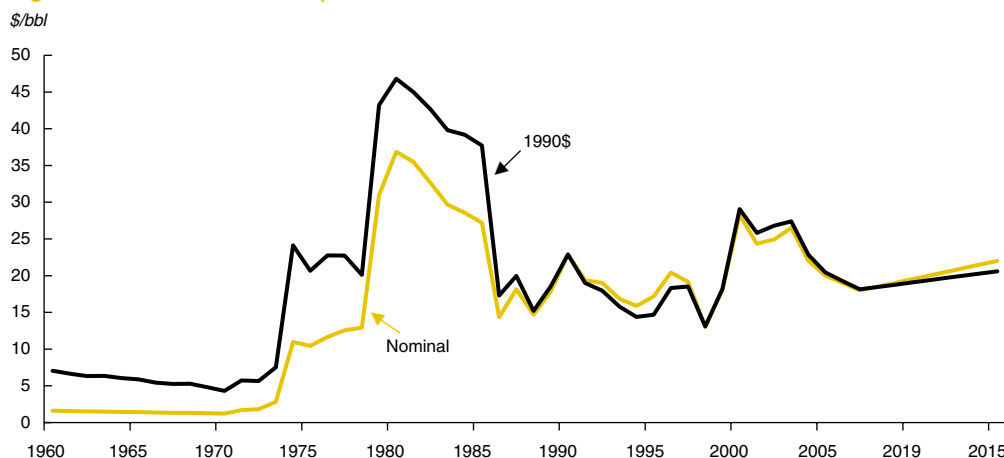
Source: World Bank.

Table A2.13 Petroleum global balance
(million barrels per day)

	Million barrels per day						Annual growth rates (%)		
	1970	1980	1990	2000	2002	2003	1970–80	1980–90	1990–00
Consumption									
OECD	34.0	41.5	41.5	47.8	47.6	48.2	2.0	0.0	1.3
FSU	5.0	8.9	8.4	3.6	3.7	3.8	5.9	−0.6	−7.2
Other non-OECD	6.8	12.3	16.1	24.8	25.6	25.9	6.1	2.7	4.1
Total	45.7	62.6	66.0	76.2	76.9	77.9	3.2	0.5	1.3
Production									
OPEC	23.5	27.2	24.5	30.7	28.6	29.8	1.5	−1.0	1.9
FSU	7.1	12.1	11.5	7.9	9.4	10.2	5.4	−0.5	−2.6
Other non-OPEC	17.4	24.6	30.9	38.0	38.6	39.1	3.5	2.3	1.9
Total	48.0	63.9	66.9	76.6	76.5	79.1	2.9	0.5	1.3
Stock Change, Misc.	**2.3**	**1.3**	**0.9**	**0.4**	**−0.3**	**1.2**			

Sources: British Petroleum, International Energy Agency, and World Bank.

In the longer term, demand growth will only be moderate, as it has been the past two decades (table A2.13), but new technologies, environmental pressures, and government policies could further reduce this growth. Prices below US$20/bbl are sufficiently high to generate ample development of conventional and non-conventional oil supplies, and there are no apparent resource constraints far into the future. In addition, new areas continue to be developed (e.g., deep water offshore), and development costs are expected to continue to fall from new technologies (shifting supply curves outward). In addition, OPEC countries are increasing capacity, and will add to the supply competition in coming years. Consequently, real oil prices are expected to continue their long-term decline.

Table A2.14 Commodity prices and price projections in current dollars

Commodity	Unit	Actual					Projections				
		1970	1980	1990	2000	2002	2003	2004	2005	2010	2015
Energy											
Coal, Australia	$/mt	n.a.	n.a.	39.67	26.25	27.06	26.00	26.50	27.00	29.50	32.00
Crude oil, average	$/bbl	1.21	36.87	22.88	28.23	24.93	26.50	22.00	20.00	19.50	22.00
Natural gas, Europe	$/mmbtu	n.a.	3.40	2.55	3.86	3.05	3.75	3.00	2.65	2.75	3.00
Natural gas, US	$/mmbtu	0.17	1.55	1.70	4.31	3.35	5.25	3.75	3.50	3.25	3.50
Non-Energy Commodities											
Agriculture											
Beverages											
Cocoa	c/kg	67.5	260.4	126.7	90.6	177.8	177.0	172.0	167.0	160.0	150.0
Coffee, other milds	c/kg	114.7	346.6	197.2	192.0	135.7	145.5	158.7	165.4	210.1	230.4
Coffee, robusta	c/kg	91.4	324.3	118.2	91.3	66.2	88.2	92.6	92.6	104.7	125.0
Tea, auctions (3) average	c/kg	83.5	165.9	205.8	187.6	150.6	150.0	155.0	160.0	170.0	170.0
Food											
Fats and oils											
Coconut oil	$/mt	397.2	673.8	336.5	450.3	421.0	442.0	460.0	470.0	500.0	530.0
Copra	$/mt	224.8	452.7	230.7	304.8	266.3	305.0	380.0	420.0	450.0	475.0
Groundnut oil	$/mt	378.6	858.8	963.7	713.7	687.1	1100.0	1000.0	890.0	795.0	796.0
Palm oil	$/mt	260.1	583.7	289.8	310.3	390.3	425.0	415.0	415.0	420.0	445.0
Soybean meal	$/mt	102.6	262.4	200.2	189.2	175.2	193.0	183.0	175.0	185.0	195.0
Soybean oil	$/mt	286.3	597.6	447.3	338.1	454.3	527.0	485.0	450.0	460.0	480.0
Soybeans	$/mt	116.9	296.2	246.8	211.8	212.7	241.0	225.0	210.0	225.0	235.0
Grains											
Maize	$/mt	58.4	125.3	109.3	88.5	99.3	106.0	100.0	95.0	105.0	112.0
Rice, Thailand, 5%	$/mt	126.3	410.7	270.9	202.4	191.9	199.0	202.0	205.0	220.0	230.0
Sorghum	$/mt	51.8	128.9	103.9	88.0	101.7	106.0	100.0	95.0	105.0	112.0
Wheat, US, HRW	$/mt	54.9	172.7	135.5	114.1	148.1	143.0	135.0	130.0	145.0	155.0
Other food											
Bananas, US	$/mt	166.1	377.3	540.9	424.0	528.6	410.0	425.0	440.0	530.0	555.0
Beef, US	c/kg	130.4	276.0	256.3	193.2	212.7	211.6	218.2	220.5	222.0	220.0
Oranges	$/mt	168.0	400.2	531.1	363.2	555.0	645.0	550.0	500.0	510.0	530.0
Shrimp, Mexico	c/kg	n.a.	1,152	1,069	1,513	1,052	1,200	1,275	1,350	1,550	1,650
Sugar, world	c/kg	8.2	63.16	27.67	18.04	15.18	16.00	15.40	15.00	19.00	21.00
Agricultural raw materials											
Timber											
Logs, Cameroon	$/cum	43.0	251.7	343.5	275.4	n.a.	275.0	280.0	285.0	320.0	350.0
Logs, Malaysia	$/cum	43.1	195.5	177.2	190.0	163.4	185.0	188.0	205.0	245.0	265.0
Sawnwood, Malaysia	$/cum	175.0	396.0	533.0	594.7	526.5	550.0	570.0	610.0	700.0	780.0
Other raw materials											
Cotton	c/kg	67.6	206.2	181.9	130.2	101.9	130.1	129.0	132.3	141.1	143.3
Rubber, RSS1, Malaysia	c/kg	40.7	142.5	86.5	69.1	77.1	95.0	90.0	94.8	88.2	90.4
Tobacco	$/mt	1,076	2,276	3,392	2,976	2,740	2,700	2,750	2,800	2,950	3,000
Fertilizers											
DAP	$/mt	54.0	222.2	171.4	154.2	157.5	177.0	175.0	170.0	170.0	175.0
Phosphate rock	$/mt	11.00	46.71	40.50	43.75	40.38	38.00	38.00	38.00	40.00	42.00
Potassium chloride	$/mt	32.0	115.7	98.1	122.5	113.3	112.5	115.0	116.0	118.0	120.0
TSP	$/mt	43.0	180.3	131.8	137.7	133.1	142.0	140.0	140.0	146.0	154.0
Urea, E. Europe, bagged	$/mt	n.a.	n.a.	119.3	101.1	94.4	130.0	128.0	126.7	125.0	130.0
Metals and minerals											
Aluminum	$/mt	556	1,456	1,639	1,549	1,350	1,390	1,425	1,500	1,600	1,700
Copper	$/mt	1,416	2,182	2,661	1,813	1,559	1,650	1,800	1,900	2,000	2,050
Gold	$/toz	35.9	607.9	383.5	279.0	310.0	330.0	300.0	280.0	300.0	300.0
Iron ore, Carajas	c/dmtu	9.84	28.09	32.50	28.79	29.31	31.95	32.00	31.00	32.00	32.50
Lead	c/kg	30.3	90.6	81.1	45.4	45.3	47.0	51.0	55.0	60.0	62.5
Nickel	$/mt	2,846	6,519	8,864	8,638	6,772	8,200	8,500	8,000	6,700	6,800
Silver	c/toz	177.0	2,064	482.0	499.9	462.5	460.0	480.0	500.0	525.0	550.0
Tin	c/kg	367.3	1,677	608.5	543.6	406.1	470.0	500.0	525.0	540.0	550.0
Zinc	c/kg	29.6	76.1	151.4	112.8	77.9	80.0	92.0	100.0	105.0	110.0

n.a. = Not available.
Note: Projections as of June 24, 2003
Source: World Bank, Development Prospects Group.

Table A2.15 Commodity prices and price projections in constant 1990 dollars

Commodity	Unit	Actual					Projections				
		1970	1980	1990	2000	2002	2003	2004	2005	2010	2015
Energy											
Coal, Australia	$/mt	n.a.	n.a.	39.67	26.97	28.06	26.87	27.49	27.59	28.84	29.93
Crude oil, average	$/bbl	4.31	46.80	22.88	29.01	25.84	27.39	22.82	20.44	19.06	20.58
Natural gas, Europe	$/mmbtu	n.a.	4.32	2.55	3.96	3.16	3.88	3.11	2.71	2.69	2.81
Natural gas, US	$/mmbtu	0.61	1.97	1.70	4.43	3.48	5.43	3.89	3.58	3.18	3.27
Non-Energy Commodities											
Agriculture											
Beverages											
Cocoa	c/kg	240.6	330.5	126.7	93.1	184.3	183.0	178.4	170.6	156.4	140.3
Coffee, other milds	c/kg	408.8	440.0	197.2	197.3	140.7	150.4	164.7	169.0	205.4	215.5
Coffee, robusta	c/kg	325.7	411.7	118.2	93.8	68.6	91.2	96.1	94.6	102.4	116.9
Tea, auctions (3) average	c/kg	297.7	210.6	205.8	192.8	156.1	155.0	160.8	163.5	166.2	159.0
Food											
Fats and oils											
Coconut oil	$/mt	1416.0	855.3	336.5	462.7	436.5	456.9	477.2	480.2	488.8	495.7
Copra	$/mt	801.6	574.7	230.7	313.1	276.1	315.3	394.2	429.1	439.9	444.3
Groundnut oil	$/mt	1349.5	1090.1	963.7	733.3	712.4	1137.0	1037.5	909.4	777.1	744.6
Palm oil	$/mt	927.1	740.9	289.8	318.8	404.6	439.3	430.5	424.0	410.6	416.2
Soybean meal	$/mt	365.7	333.1	200.2	194.4	181.6	199.5	189.9	178.8	180.8	182.4
Soybean oil	$/mt	1020.8	758.6	447.3	347.4	471.0	544.7	503.2	459.8	449.7	449.0
Soybeans	$/mt	416.8	376.0	246.8	217.7	220.5	249.1	233.4	214.6	219.9	219.8
Grains											
Maize	$/mt	208.2	159.0	109.3	91.0	102.9	109.6	103.8	97.1	102.6	104.8
Rice, Thailand, 5%	$/mt	450.3	521.4	270.9	208.0	198.9	205.7	209.6	209.5	215.1	215.1
Sorghum	$/mt	184.7	163.6	103.9	90.4	105.5	109.6	103.8	97.1	102.6	104.8
Wheat, US, HRW	$/mt	195.7	219.3	135.5	117.2	153.5	147.8	140.1	132.8	141.7	145.0
Other food											
Bananas, US	$/mt	592.1	478.9	540.9	435.7	548.0	423.8	440.9	449.6	518.1	519.1
Beef, US	c/kg	465.0	350.3	256.3	198.5	220.6	218.7	226.4	225.3	217.0	205.8
Oranges	$/mt	599.1	508.0	531.1	373.2	575.5	666.7	570.6	510.9	498.5	495.7
Shrimp, Mexico	c/kg	n.a.	1,462	1,069	1,554	1,090	1,240	1,323	1,379	1,515	1,543
Sugar, world	c/kg	29.32	80.17	27.67	18.5	15.7	16.5	16.0	15.3	18.6	19.6
Agricultural raw materials											
Timber											
Logs, Cameroon	$/cum	153.3	319.5	343.5	283.0	n.a.	284.2	290.5	291.2	312.8	327.4
Logs, Malaysia	$/cum	153.8	248.2	177.2	195.2	169.4	191.2	195.0	209.5	239.5	247.9
Sawnwood, Malaysia	$/cum	623.9	502.7	533.0	611.1	545.9	568.5	591.4	623.3	684.3	729.6
Other raw materials											
Cotton	c/kg	241.1	261.7	181.9	133.8	105.7	134.4	133.8	135.2	137.9	134.0
Rubber, RSS1, Malaysia	c/kg	145.2	180.8	86.5	71.0	79.9	98.2	93.4	96.9	86.2	84.6
Tobacco	$/mt	3,836	2,889	3,392	3,058	2,841	2,791	2,853	2,861	2,884	2,806
Fertilizers											
DAP	$/mt	192.5	282.1	171.4	158.5	163.3	183.0	181.6	173.7	166.2	163.7
Phosphate rock	$/mt	39.2	59.3	40.5	45.0	41.9	39.3	39.4	38.8	39.1	39.3
Potassium chloride	$/mt	114.1	146.9	98.1	125.9	117.5	116.3	119.3	118.5	115.4	112.2
TSP	$/mt	153.3	228.8	131.8	141.5	138.0	146.8	145.2	143.1	142.7	144.1
Urea, E. Europe, bulk	$/mt	n.a.	n.a.	119.3	103.9	97.8	134.4	132.8	129.5	122.2	121.6
Metals and minerals											
Aluminum	$/mt	1,982	1,848	1,639	1,592	1,400	1,437	1,478	1,533	1,564	1,590
Copper	$/mt	5,047	2,770	2,661	1,863	1,617	1,705	1,867	1,941	1,955	1,918
Gold	$/toz	128.1	771.6	383.5	286.7	321.4	341.1	311.2	286.1	293.3	280.6
Iron ore	c/dmtu	35.1	35.7	32.5	29.6	30.4	33.0	33.2	31.7	31.3	30.4
Lead	c/kg	108.0	115.0	81.1	46.6	46.9	48.6	52.9	56.2	58.7	58.5
Nickel	$/mt	10,147	8,275	8,864	8,876	7,021	8,475	8,818	8,174	6,549	6,360
Silver	c/toz	631.0	2619.4	482.0	513.7	479.5	475.5	498.0	510.9	513.2	514.5
Tin	c/kg	1309.6	2129.3	608.5	558.5	421.0	485.8	518.7	536.4	527.9	514.5
Zinc	c/kg	105.5	96.6	151.4	115.9	80.7	82.7	95.5	102.2	102.6	102.9

n.a. = Not available.
Note: Projections as of June 24, 2003
Source: World Bank, Development Prospects Group.

Table A2.16 Weighted indices of commodity prices and inflation

Index	Actual					Projections[a]				
	1970	1980	1990	2000	2002	2003	2004	2005	2010	2015
Current dollars										
Petroleum	5.3	161.2	100.0	123.4	109.0	115.8	96.2	87.4	85.2	96.2
Non-energy commodities[b]	43.8	125.5	100.0	86.9	83.0	88.8	89.7	91.1	97.7	102.6
Agriculture	45.8	138.1	100.0	87.7	86.5	92.7	92.6	93.7	102.0	107.6
Beverages	56.9	181.4	100.0	88.4	84.6	89.1	92.4	93.6	106.1	111.6
Food	46.7	139.3	100.0	84.5	90.1	94.0	91.7	89.8	96.5	101.1
Fats and oils	64.4	148.7	100.0	96.2	101.2	112.4	107.7	104.2	108.4	114.1
Grains	46.7	134.3	100.0	79.5	88.1	89.8	87.0	85.0	93.2	98.8
Other food	32.2	134.3	100.0	77.7	82.2	81.2	81.2	80.8	88.7	91.8
Raw materials	36.4	104.6	100.0	91.4	83.2	93.6	93.8	98.8	106.1	113.0
Timber	31.8	79.0	100.0	111.0	98.1	103.3	106.8	114.6	132.2	146.7
Other Raw Materials	39.6	122.0	100.0	78.0	73.1	86.9	84.9	88.0	88.3	90.0
Fertilizers	30.4	128.9	100.0	105.8	100.5	100.5	102.6	101.7	105.4	110.9
Metals and minerals	40.4	94.2	100.0	83.0	72.8	78.1	81.6	83.6	86.4	89.5
Constant 1990 dollars[c]										
Petroleum	18.9	204.5	100.0	127.0	117.2	119.7	99.8	89.3	83.3	89.9
Non-energy commodities	156.3	159.2	100.0	89.4	89.3	91.7	93.1	93.1	95.5	96.0
Agriculture	163.3	175.2	100.0	90.3	93.0	95.8	96.0	95.8	99.7	100.7
Beverages	202.8	230.2	100.0	90.9	91.0	92.1	95.9	95.7	103.7	104.4
Food	166.5	176.7	100.0	87.0	96.9	97.2	95.1	91.8	94.4	94.6
Fats and oils	229.5	188.6	100.0	99.0	108.8	116.2	111.7	106.4	105.9	106.7
Grains	166.6	170.4	100.0	81.8	94.7	92.8	90.2	86.9	91.1	92.4
Other food	114.9	170.5	100.0	80.0	88.4	84.0	84.2	82.5	86.7	85.9
Raw materials	129.8	132.7	100.0	94.0	89.5	96.7	97.3	100.9	103.7	105.7
Timber	113.3	100.3	100.0	114.2	105.5	106.8	110.8	117.1	129.2	137.3
Other Raw Materials	141.1	154.8	100.0	80.2	78.6	89.8	88.1	89.9	86.3	84.2
Fertilizers	108.3	163.6	100.0	108.9	108.1	103.9	106.5	103.9	103.0	103.7
Metals and minerals	143.9	119.5	100.0	85.4	78.3	80.7	84.6	85.5	84.5	83.7
Inflation indices, 1990=100[d]										
MUV index[e]	28.05	78.81	100.00	97.17	92.99	96.75	96.39	97.87	102.30	106.91
% change per annum		10.88	2.41	-0.29	–2.18	4.05	-0.37	1.53	0.89	0.88
US GDP deflator	33.59	65.93	100.00	123.56	127.91	129.96	132.69	135.87	152.83	172.07
% change per annum		6.98	4.25	2.14	1.75	1.60	2.10	2.40	2.38	2.40

a. Commodity price projections as of June 24, 2003.
b. The World Bank primary commodity price indices are computed based on 1987–89 export values in US dollars for low- and middle-income economies, rebased to 1990. Weights for the sub-group indices expressed as ratios to the non-energy index are as follows in percent: agriculture 69.1, fertilizers 2.7, metals and minerals 28.2; beverages 16.9, food 29.4, raw materials 22.8; fats and oils 10.1, grains 6.9, other food 12.4; timber 9.3 and other raw mterials 13.6.
c. Computed from unrounded data and deflated by the MUV index
d. Inflation indices for 2002–2015 are projections as of June 10, 2003. MUV for 2001 is an estimate. Growth rates for years 1980, 1990, 2000, 2002, 2005, 2010 and 2015 refer to compound annual rate of change between adjacent end-point years; all others are annual growth rates from the previous year.
e. Unit value index in US dollar terms of manufactures exported from the G-5 countries (France, Germany, Japan, UK, and US) weighted proportionally to the countries' exports to the developing countries
Source: World Bank, Development Prospects Group. Historical US GDP deflator: US Department of Commerce.